MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN OF

DRAINAGE REPAIRS AND IMPROVEMENTS AT VARIOUS LOCATIONS (SPY POND)

IN THE TOWNS OF

ARLINGTON & BELMONT

MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. (STP)-002S(352)

ARLINGTON - BELMONT (SPY POND)
DRAINAGE REPAIRS AND IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	(STP)-002S(352)	01	14
PROJECT FILE NO.	606280		

TITLE SHEET & INDEX

11945.05[75%]HD - COV.DWG 18-Sep-2012

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JUNE 15, 2012, THE 2012 CONSTRUCTION STANDARD DETAILS, THE 2006 PROJECT DEVELOPMENT AND DESIGN GUIDE, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATES TO TRAFFIC STANDARD DETAILS ONLY), THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

INDEX

CONVENTIONAL SIGNS

COUNTY, CITY, OR TOWN BOUNDARY

COUNTY, CITY, OR TOWN SIDE LINE

FENCE LINE

BASE LINE OR SURVEY LINE — S36°04'20"W 53.578 — 2+00

RIGHT OF WAY LINE

CULVERT

RETAINING WALL

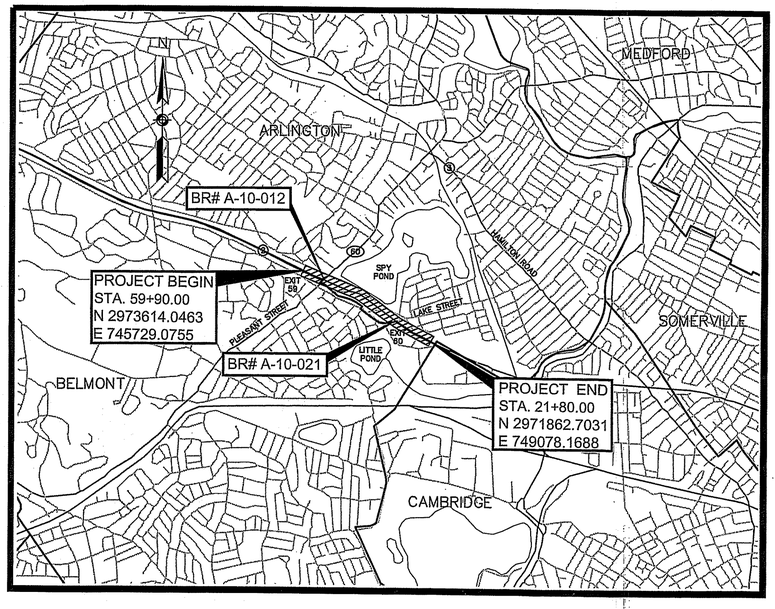
GUARD RAIL

STONE WALL

TREE LINE

POLE

ELEVATIONS — PROPOSED SURFACE / PRESENT SURFACE — PRES. 90.7 — PROP. 90.91 — 10+20



2000 0 2000 4000

SCALE 1" = 2000'

LENGTH OF PROJECT = 3,810.00 FEET = 0.722 MILES

RDA SUBMISSON

DESIGN DESIGNATION (STATE ROUTE 2)

DESIGN SPEED	50 MPH
ADT (2009)	58,300
FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL

RECOMMENDED FOR APPROVAL

CHIEF ENGINEER — DATE

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR — DATE

APPROVED

HIGHWAY ADMINISTRATOR — DATE

LEGEND

GENERAL SYMBOLS

EXISTING	PROPOSED	
JB OR BRJB	JB OR BRJB	JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
CB	CB	CATCH BASIN
	DCB	DOUBLE CATCH BASIN
CI	CI	CURB INLET
	BUOY	BUOY
	FPL	FLAG POLE
		GAS PUMP
		FLARED END SECTION
DI	DI	DROP INLET
MB	MB	MAIL BOX
GR	GRAN POST	GRANITE POST
PLN	PLANTER	PLANTER
PST	POST	POST
TBH	TBH	TELEPHONE BOOTH
VLT	VLT	VAULT
VLV	VLV	VALVE
WELL	WELL	WELL
EHH	EHH	ELECTRIC MANHOLE (HANDHOLE)
FCGA		GATE POST
FL	FL	FLOW LINE
GG		GAS GATE
BH	BH	BORING HOLE
		MONITORING WELL
TP	TEP	TEST PIT
HC	CONC. HDWL	CONCRETE HEADWALL
HH		HANDHOLE
HS	STONE DHWL	STONE HEADWALL
HYD	HYD	HYDRANT
LPL	LPL	LIGHT POLE
CO. BO.	CO. BD.	COUNTY BOUND
GPS		GPS POINT
CMH		CABLE MANHOLE
DMH		DRAINAGE MANHOLE
EMH		ELECTRIC MANHOLE
GMH		GAS MANHOLE
MMH		MISC MANHOLE
OMH		OTHER MANHOLE
SMH	S	SEWER MANHOLE
TMH		TELEPHONE MANHOLE
WMH		WATER MANHOLE
MHB	MHB	MHD BOUND
MON	MON	MONUMENT
SB	SB	STONE BOUND
TOWN OR CITY BD.	TOWN OR CITY BD.	TOWN OR CITY BOUND
	TSN	TRAVERSE OR TRIANGULATION STATION
TPL OR GUY	TPL OR GUY	TROLLEY POLE OR GUY POLE
TRNP		TRANS. POLE
UFB	UFB	UP W ITH FIREBOX
LPDL	LPDL	POLE WITH DOUBLE LIGHT
ULT	ULT	UP W ITH 1 LIGHT
UPL	UPL	UTILITY POLE
	BUSH	BUSH
	TREE	TREE
STUMP		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
FA	FA	FIRE ALARM BOX
PM	PM	PARKING METER
		ELECTRICAL GROUND
	GV	GATE VALVE
		RIP RAP
		OVERHEAD CABLE
		DIRECT BURIAL CABLE
		CURBING
185	185	CONTOURS
		DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		ELECTRIC DUCT " "
		GAS MAIN " "
		SEWER MAIN " "
		TELEPHONE DUCT " "
		WATER MAIN " "
		BALANCE STONE WALL
		CULVERT
		GUARD RAIL
		GUTTER LINE AT DRIVEWAYS
CLF		CHAIN LINK FENCE
		STOCKADE FENCE

GENERAL SYMBOLS (CONT.)

EXISTING	PROPOSED	
		HAY BALES/SILT FENCE
		LINEAR EROSION CONTROL
		RETAINING WALL
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLAN & OVERLAY
		BANK OF RIVER OR STREAM
WF-#		BORDER OF WETLAND
	100'BZ	100 FT WETLAND BUFFER ZONE
	200'RA	200 FT RIVERFRONT AREA
DATE OF LAYOUT	DATE OF LAYOUT	STATE HIGHWAY LAYOUT
DATE OF LAYOUT	DATE OF LAYOUT	TOWN OR CITY LAYOUT
DATE OF LAYOUT	DATE OF LAYOUT	COUNTY LAYOUT
R.R. S/L		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
ℙ OR APPROX. ℙ		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

TRAFFIC SIGNAL SYMBOLS

EXISTING	PROPOSED	
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6'X 6' TYPICAL UNLESS OTHERWISE SPECIFIED)
		VIDEO SURVEILLANCE CAMERA
		MICROWAVE DETECTOR
		MAGNETOMETER (2 SHOWN)
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
	*	OPTICOM CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD (TYPE AS NOTED OR AS SPECIFIED)
		PEDESTRIAN SIGNAL HEAD, OPTICALLY PROGRAMMED
		PEDESTRIAN SIGNAL POST AND BASE
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	20'	STEEL OR ALUMINUM MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (TWO POSTS)
	20'	SIGNAL AND LIGHTING MAST ARM (OPTICOM)
		EMERGENCY PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL & METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"X12" (AND AS NOTED)
		ELECTRIC HANDHOLE 12" X 24"
		TRAFFIC SIGNAL INTERCONNECT CONDUIT
		TRAFFIC SIGNAL CONDUIT (TYPE AS NOTED)

PAVEMENT MARKINGS AND SIGNING SYSBOLS

EXISTING	PROPOSED	
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE - 12"
	CW	CROSSWALK
	SWLL	SOLID WHITE LANE LINE
	BWLL	BROKEN WHITE LANE LINE (10' LINE, 30' SPACE TYP.)
	SWEL	SOLID WHITE EDGE LINE
	YGL	YELLOW GORE LINE - 12"
	DYCL	DOUBLE YELLOW CENTER LINE
	SWCHL	SOLID WHITE CHANNELIZATION LINE - 8"
	WGL	WHITE GORE LINE - 12"
	SYEL	SOLID YELLOW EDGE LINE
	BYCL	BROKEN YELLOW CENTER LINE (10' LINE, 30' SPACE TYP.) - 4"
	SYCL	SOLID YELLOW CENTER LINE
	DWLL	DOTTED WHITE LANE LINE - 4" (2' LINE, 4' SPACE)
		DIRECTION OF TRAFFIC FLOW

ARLINGTON - BELMONT (SPY POND)
DRAINAGE REPAIRS AND IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-002S(352)	02	14
PROJECT FILE NO.	606280		

LEGEND & GENERAL NOTES

18-Sep-2012

11945.05(75%)HD - LEG.DWG

GENERAL NOTES

1. TOPOGRAPHICAL INFORMATION FROM A SURVEY BY VANASSE HANGEN BRUSTLIN, INC., WATERTOWN, MASSACHUSETTS IN MAY, 2012 (HORIZONTAL DATUM: NAD83, VERTICAL DATUM: NAVD88).
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CONTRACTOR SHALL NOTIFY "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING.
3. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
4. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
5. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
6. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.
7. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
8. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
9. ALL LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF .01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE DRAWINGS.
10. ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.
11. THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND FALLS WITHIN THE NPDES CONSTRUCTION GENERAL PERMIT (CGP) PROGRAM AND EPA JURISDICTION. PRIOR TO THE START OF CONSTRUCTION CONTRACTOR IS TO FILE A CGP NOTICE OF INTENT WITH THE EPA AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH THE NPDES REGULATIONS. CONTRACTOR SHALL CONFIRM THE OWNER HAS ALSO FILED A NOTICE OF INTENT WITH THE EPA.
12. WETLAND BOUNDARIES ARE BASED ON THE MASSGIS WETLANDS DATA LAYER AND REVIEWED IN THE FIELD BY A VHB ENVIRONMENTAL SCIENTIST. THE BOUNDARIES WERE REVISED AS NEEDED ON THE PLANS TO REFLECT EXISTING CONDITIONS IN THE FIELD. THE JURISDICTIONAL STATUS OF THE WETLAND RESOURCE AREAS WAS DETERMINED DURING THE FIELD INVESTIGATION.

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC	EXC	EXCAVATION	PVC	POINT OF VERTICAL CURVE
ABAN	ABANDON	F&C	FRAME AND COVER	PVI	POINT OF VERTICAL INTERSECTION
ADJ	ADJUST	F&G	FRAME AND GRATE	PVT	POINT OF VERTICAL TANGENCY
APPROX.	APPROXIMATE	FDN.	FOUNDATION	PVMT	PAVEMENT
A.C.	ASPHALT CONCRETE	FES	FLARED END SECTION	PWW	PAVED WATER WAY
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE	FLDSTN	FIELDSTONE	R	RADIUS OF CURVATURE
		GAR	GARAGE	R&D	REMOVE AND DISPOSE
BIT.	BITUMINOUS	GD	GROUND	RCP	REINFORCED CONCRETE PIPE
BC	BOTTOM OF CURB	GG	GAS GATE	RD	ROAD
BD.	BOUND	GI	GUTTER INLET	RDWY	ROADWAY
BL	BASELINE	GIP	GALVANIZED IRON PIPE	REM	REMOVE
BLDG	BUILDING	GRAN	GRANITE	RET	RETAIN
BM	BENCH MARK	GRAV	GRAVEL	RET WALL	RETAINING WALL
BO	BY OTHERS	GRD	GUARD	ROW	RIGHT-OF-WAY
BOS	BOTTOM OF SLOPE	GTD	GRADE TO DRAIN	RR	RAILROAD
BR.	BRIDGE	HH	HAND HOLE	R&D	REMOVE AND DISCARD
CB	CATCH BASIN	HDW, HW	HEADWALL	R&R	REMOVE AND RESET
CBCI	CATCH BASIN WITH CURB INLET	HMA	HOT MIX ASPHALT	R&S	REMOVE AND STACK
CC	CEMENT CONCRETE	HOR	HORIZONTAL	RT	RIGHT
CCM	CEMENT CONCRETE MASONRY	HYD	HYDRANT	SB	STONE BOUND
CEM	CEMENT	INV	INVERT	SHLD	SHOULDER
CI	CURB INLET	JCT	JUNCTION	SMH	SEWER MANHOLE
CIP	CAST IRON PIPE	L	LENGTH OF CURVE	ST	STREET
CLF	CHAIN LINK FENCE	LB	LEACHING BASIN	STA	STATION
CL	CENTERLINE	LP	LIGHT POLE	SSD	STOPPING SIGHT DISTANCE
CMP	CORRUGATED METAL PIPE	LT	LEFT	SHLO	STATE HIGHWAY LAYOUT LINE
CSP	CORRUGATED STEEL PIPE	MAX	MAXIMUM	SW	SIDEWALK
CO.	COUNTY	MB	MAIL BOX	T	TANGENT DISTANCE OF CURVE/ TRUCK PERCENTAGE
CONC	CONCRETE	MH	MANHOLE		
CONT	CONTINUOUS	MHB	MASSACHUSETTS HIGHWAY BOUND	TAN	TANGENT
CONST	CONSTRUCTION	MIN	MINIMUM	TEMP	TEMPORARY
CR GR	CROWN GRADE	NIC	NOT IN CONTRACT	TC	TOP OF CURB
DHV	DESIGN HOURLY VOLUME	NO.	NUMBER	TOS	TOP OF SLOPE
DI	DROP INLET	PC	POINT OF CURVATURE	TYP	TYPICAL
DIA	DIAMETER	PCC	POINT OF COMPOUND CURVATURE	UP	UTILITY POLE
DIP	DUCTILE IRON PIPE	P.G.L.	PROFILE GRADE LINE	VAR	VARIES
DW	STEADY DON'T WALK - PORTLAND ORANGE	PI	POINT OF INTERSECTION	VERT	VERTICAL
		POC	POINT ON CURVE	VC	VERTICAL CURVE
DWY	DRIVEWAY	POT	POINT ON TANGENT	WCR	WHEELCHAIR RAMP
ELEV (OR EL.)	ELEVATION	PRC	POINT OF REVERSE CURVATURE	WG	WATER GATE
EMB	EMBANKMENT	PROJ	PROJECT	WIP	WROUGHT IRON PIPE
EOP	EDGE OF PAVEMENT	PROP	PROPOSED	WM	WATER METER/WATER MAIN
EXIST (OR EX)	EXISTING	PSB	PLANTABLE SOIL BORROW	X-SECT	CROSS SECTION
		PT	POINT OF TANGENCY		

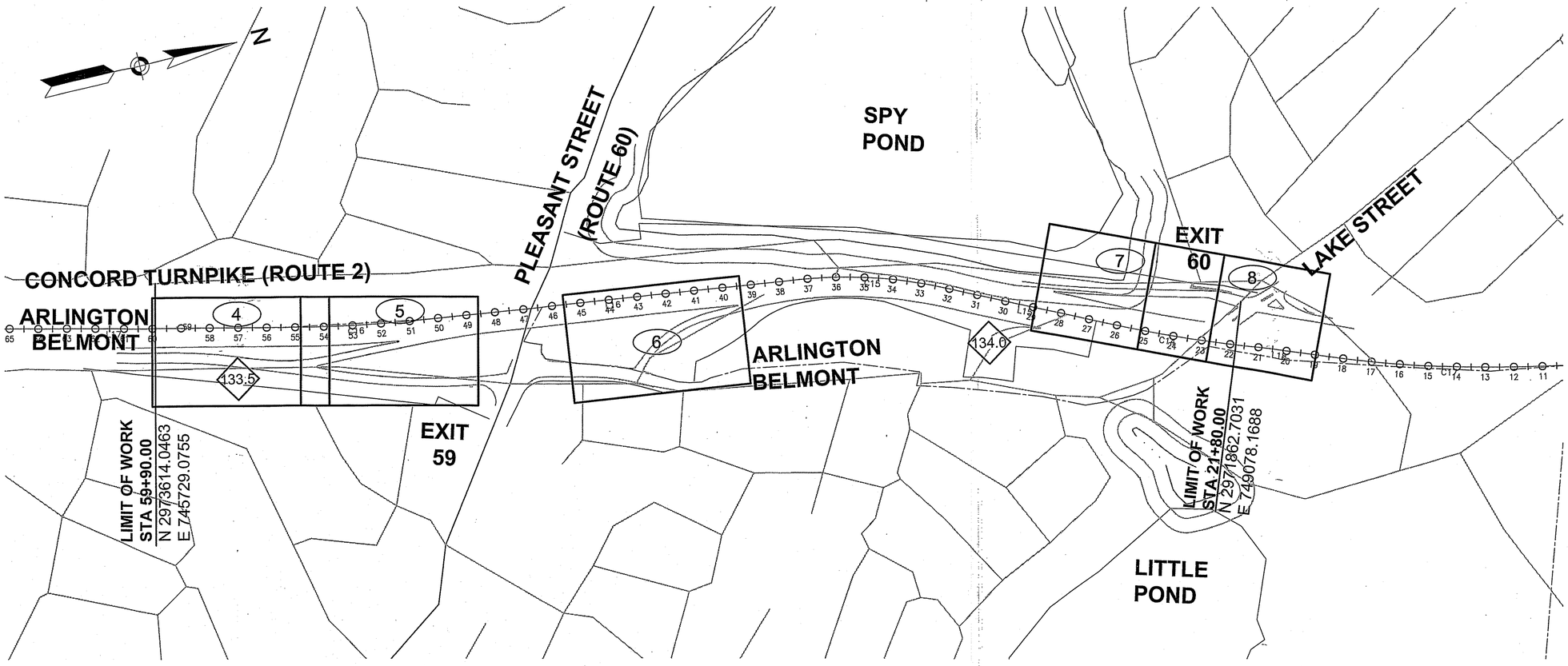
MassDOT DWT Version:

CONCORD TURNPIKE (RT. 2) CONSTRUCTION BASELINE DATA						
NUMBER	STARTING STATION	END STATION	CURVE DATA	LINE DATA	NORTHING	EASTING
C17	10+05.57	18+46.06	R=4600.00' Δ=10°28'08" L=840.49' T=421.42'		2971279.4214	750095.0203
L18	18+46.06	22+00.00		N56° 24' 56"W 353.94'	2971677.9790	749356.3647
C14	22+00.00	26+35.39	R=4600.00' Δ=5°25'23" L=435.39' T=217.86'		2971873.7664	749061.5074
L15	26+35.39	32+14.32		N50° 59' 04"W 578.93'	2972131.4519	748710.7627
C15	32+14.32	37+28.94	R=1600.00' Δ=18°25'43" L=514.62' T=259.55'		2972495.9065	748260.9485
L16	37+28.94	50+44.10		N69° 24' 47"W 1315.16'	2972750.5698	747816.3036
C16	50+44.10	55+32.71	R=4600.00' Δ=6°05'09" L=488.60' T=244.53'		2973213.0173	746585.1301
L17	55+32.71	67+38.34		N63° 19' 38"W 1205.63'	2973408.7699	746137.7058

ARLINGTON - BELMONT (SPY POND) DARK BROOK DRAINAGE REPAIRS AND IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-002S(352)	03	14
PROJECT FILE NO. 606280			

KEY AND BASELINE DATA PLAN



LEGEND

- (XX) CONSTRUCTION PLANS
- XX SHEET NUMBER
- (Y.Y) MILE MARKER

200 0 200 400
SCALE IN FEET

11945.05[75%]HD - KEY.DWG 18-Sep-2012

MassDOT OHT VersaSync

ARLINGTON - BELMONT (SPY POND)
DRAINAGE REPAIRS AND IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-002S(352)	04	14
PROJECT FILE NO.	606280		

CONSTRUCTION PLANS

11945.05[75%]HD - GEN.DWG 18-Sep-2012

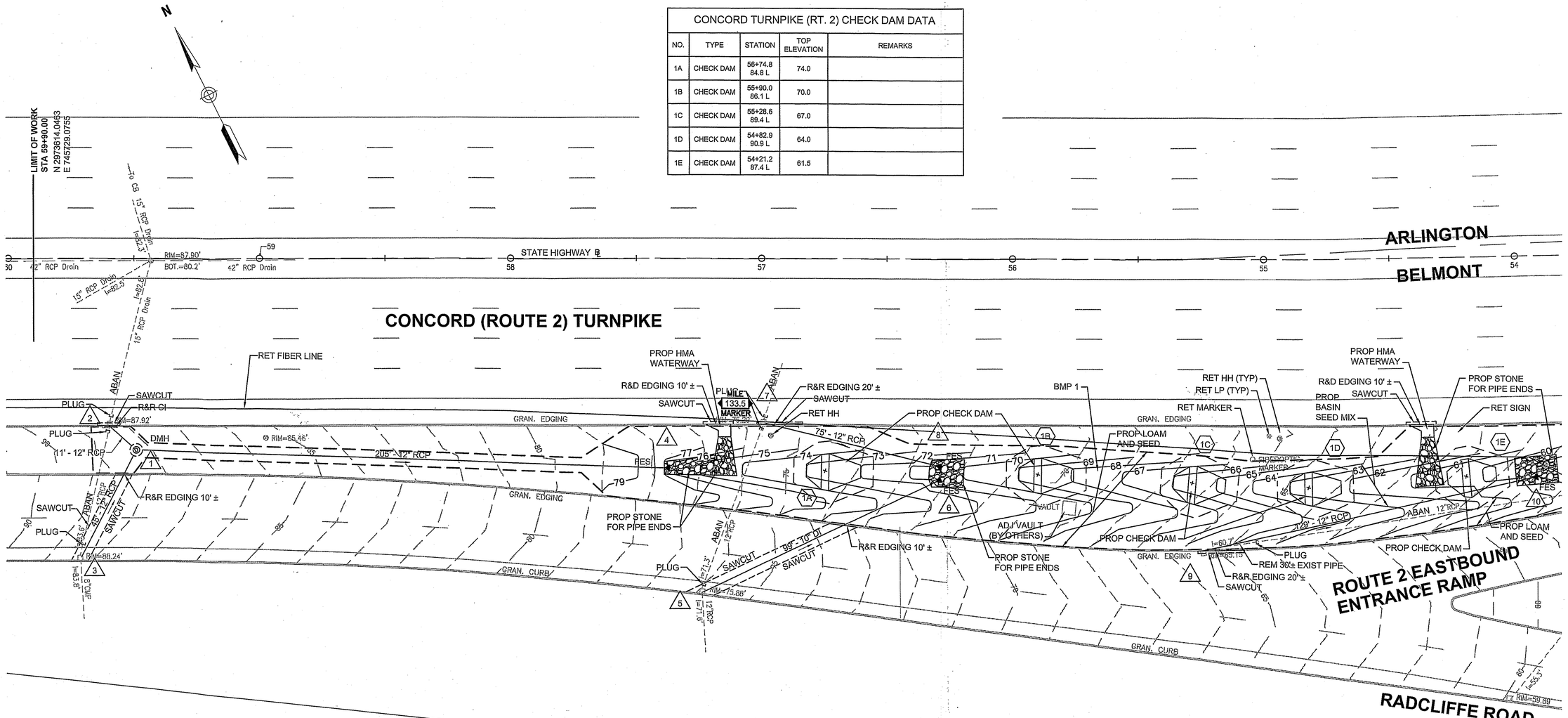
HIGHWAY GUARD DETAILS

NONE

DRAINAGE DETAILS

SEE BELOW

CONCORD TURNPIKE (RT. 2) CHECK DAM DATA				
NO.	TYPE	STATION	TOP ELEVATION	REMARKS
1A	CHECK DAM	56+74.8 84.8 L	74.0	
1B	CHECK DAM	55+90.0 86.1 L	70.0	
1C	CHECK DAM	55+28.6 89.4 L	67.0	
1D	CHECK DAM	54+82.9 90.9 L	64.0	
1E	CHECK DAM	54+21.2 87.4 L	61.5	



CONCORD TURNPIKE (RT. 2) DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
1	DMH	59+49.3 76.0 L	88.3	(3) 83.3 (2) 83.8	83.2	
2	EX CB	59+60.3 66.3 L	87.9		83.9	R&D EXIST F&G PROP F&G
3	EX CB	59+71.8 120.1 L	88.2		83.7	R&D EXIST F&G PROP F&G
4	FES	57+36.8 83.8 L	--	(1) 76.5		LENGTH OF STONE FOR PIPE ENDS = 18'
5	EX CB	57+24.8 133.9 L	75.9		71.5	R&D EXIST F&G PROP F&G

CONCORD TURNPIKE (RT. 2) DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
6	FES	56+28.7 88.0 L	--	(5) 70.5		LENGTH OF STONE FOR PIPE ENDS = 10'
7	EX CB	56+99.5 66.3 L	75.3		71.3	R&D EXIST F&G PROP F&G
8	FES	56+28.6 83.0 L	--	(7) 70.5		LENGTH OF STONE FOR PIPE ENDS = 10'
9	EX CB	55+24.3 116.3 L	65.2		60.7	R&D EXIST F&G PROP F&G
10	FES	53+93.3 88.0 L	--	(9) 59.0		LENGTH OF STONE FOR PIPE ENDS = 10'

20 0 20 40
SCALE IN FEET

MassDOT CWT Variation

HIGHWAY GUARD DETAILS

NONE

DRAINAGE DETAILS

SEE BELOW

ARLINGTON - BELMONT (SPY POND)
DRAINAGE REPAIRS AND IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-002S(352)	05	14
PROJECT FILE NO.	606280		

CONSTRUCTION PLANS

11945.05(75%)HD - GEN.DWG 16-Sep-2012

CONCORD TURNPIKE (RT. 2) DRAINAGE STRUCTURE DATA

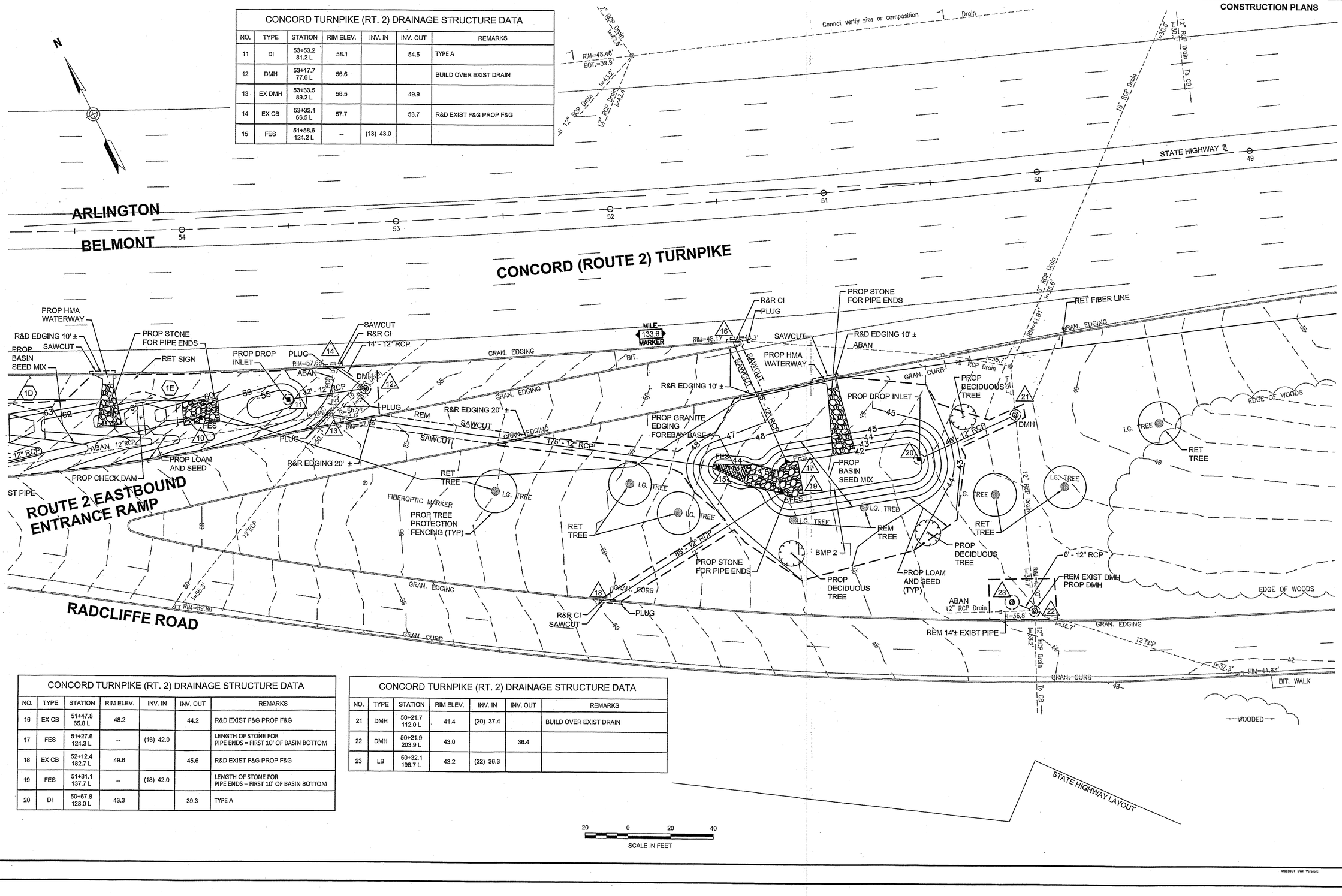
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
11	DI	53+53.2 81.2 L	58.1		54.5	TYPE A
12	DMH	53+17.7 77.6 L	56.6			BUILD OVER EXIST DRAIN
13	EX DMH	53+33.5 89.2 L	56.5		49.9	
14	EX CB	53+32.1 66.5 L	57.7		53.7	R&D EXIST F&G PROP F&G
15	FES	51+58.6 124.2 L	--	(13) 43.0		

CONCORD TURNPIKE (RT. 2) DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
16	EX CB	51+47.8 65.8 L	48.2		44.2	R&D EXIST F&G PROP F&G
17	FES	51+27.6 124.3 L	--	(16) 42.0		LENGTH OF STONE FOR PIPE ENDS = FIRST 10' OF BASIN BOTTOM
18	EX CB	52+12.4 182.7 L	49.6		45.6	R&D EXIST F&G PROP F&G
19	FES	51+31.1 137.7 L	--	(18) 42.0		LENGTH OF STONE FOR PIPE ENDS = FIRST 10' OF BASIN BOTTOM
20	DI	50+67.8 128.0 L	43.3		39.3	TYPE A

CONCORD TURNPIKE (RT. 2) DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
21	DMH	50+21.7 112.0 L	41.4	(20) 37.4		BUILD OVER EXIST DRAIN
22	DMH	50+21.9 203.9 L	43.0		36.4	
23	LB	50+32.1 198.7 L	43.2	(22) 36.3		



CONTINUED ON SHEET NO. 4

CONTINUED ON SHEET NO. 6

MassDOT DWT Version

HIGHWAY GUARD DETAILS

NONE

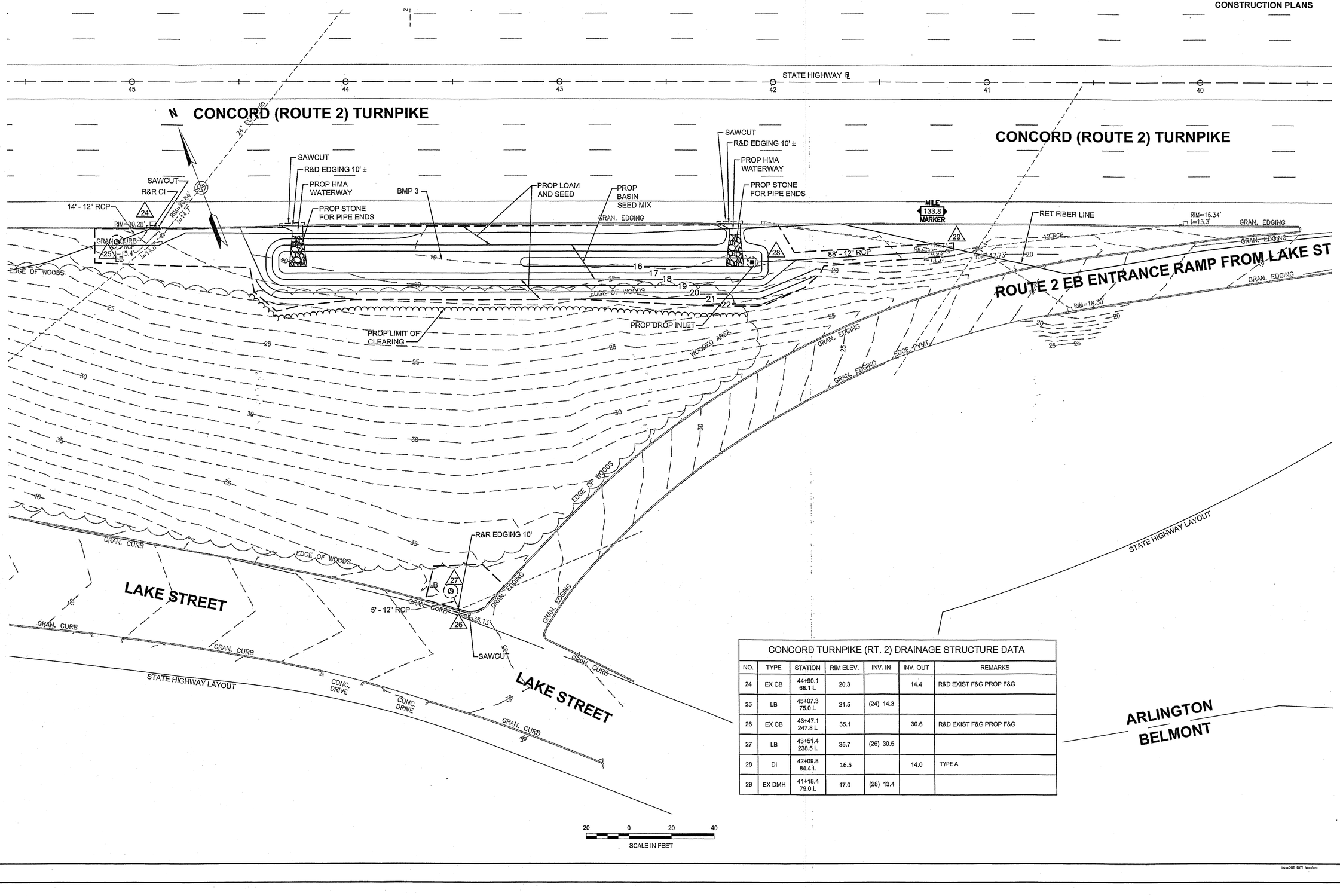
DRAINAGE DETAILS

SEE BELOW

ARLINGTON - BELMONT (SPY POND)
DRAINAGE REPAIRS AND IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-002S(352)	06	14
PROJECT FILE NO.	606280		

CONSTRUCTION PLANS



CONTINUED ON SHEET NO. 5

CONCORD TURNPIKE (RT. 2) DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
24	EX CB	44+90.1 68.1 L	20.3		14.4	R&D EXIST F&G PROP F&G
25	LB	45+07.3 75.0 L	21.5	(24) 14.3		
26	EX CB	43+47.1 247.8 L	35.1		30.6	R&D EXIST F&G PROP F&G
27	LB	43+51.4 238.5 L	35.7	(26) 30.5		
28	DI	42+09.8 84.4 L	16.5		14.0	TYPE A
29	EX DMH	41+18.4 79.0 L	17.0	(28) 13.4		

20 0 20 40
SCALE IN FEET

1945.05[7/5]HD - GEN.DWG 18-Sep-2012

MassDOT CWT Version

ARLINGTON - BELMONT (SPY POND)
DRAINAGE REPAIRS AND IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-002S(352)	07	14
PROJECT FILE NO.	606280		

CONSTRUCTION PLANS

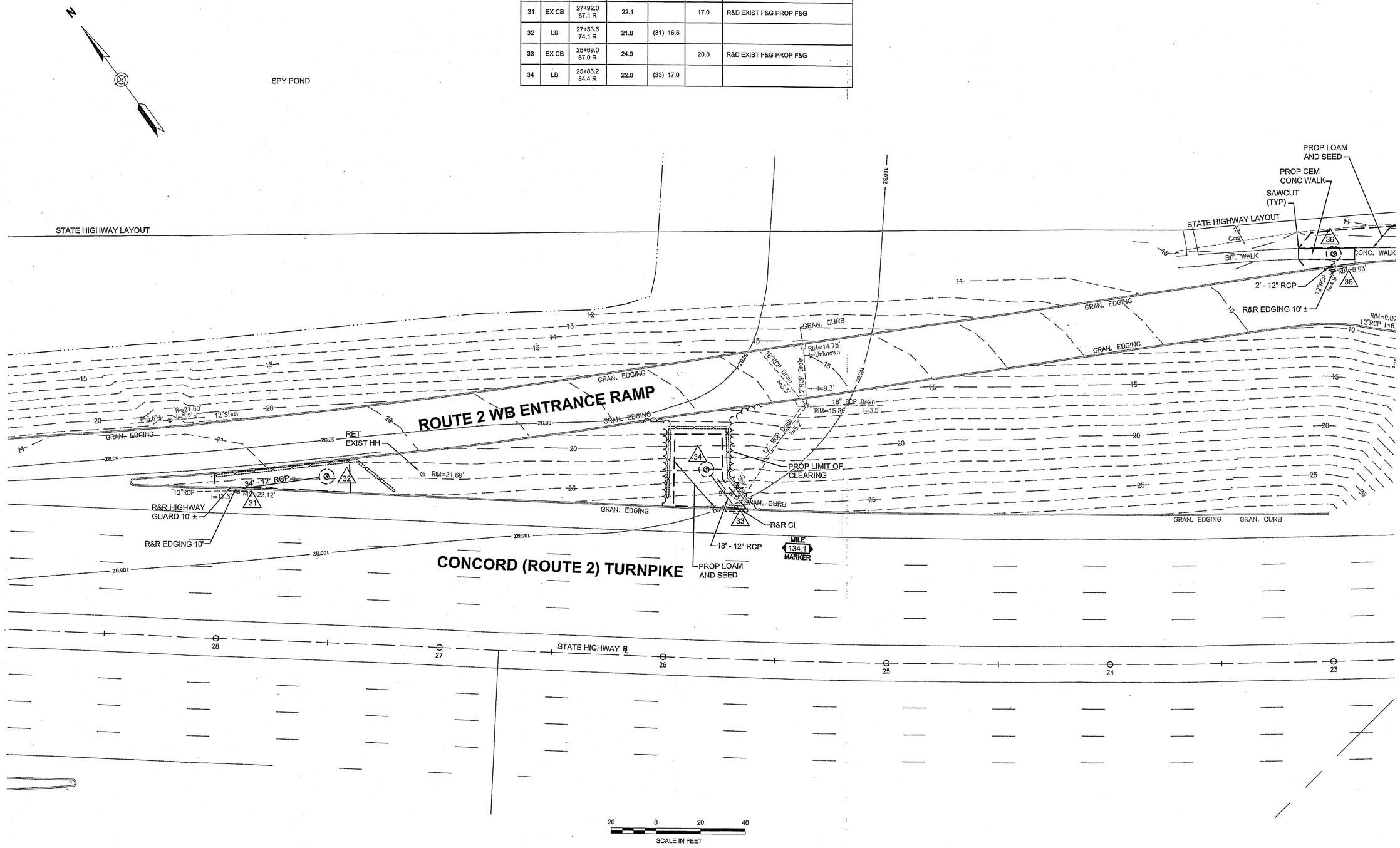
HIGHWAY GUARD DETAILS

NONE

DRAINAGE DETAILS

SEE BELOW

CONCORD TURNPIKE (RT. 2) DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
31	EX CB	27+92.0 67.1 R	22.1		17.0	R&D EXIST F&G PROP F&G
32	LB	27+53.5 74.1 R	21.8	(31) 16.6		
33	EX CB	25+69.0 67.0 R	24.9		20.0	R&D EXIST F&G PROP F&G
34	LB	25+83.2 84.4 R	22.0	(33) 17.0		



CONTINUED ON SHEET NO. 8

11945.05[75%]HD - GEN.DWG 18-Sep-2012

MassDOT CAD Version

HIGHWAY GUARD DETAILS

NONE

DRAINAGE DETAILS

SEE BELOW

ARLINGTON - BELMONT (SPY POND)
DRAINAGE REPAIRS AND IMPROVEMENTS

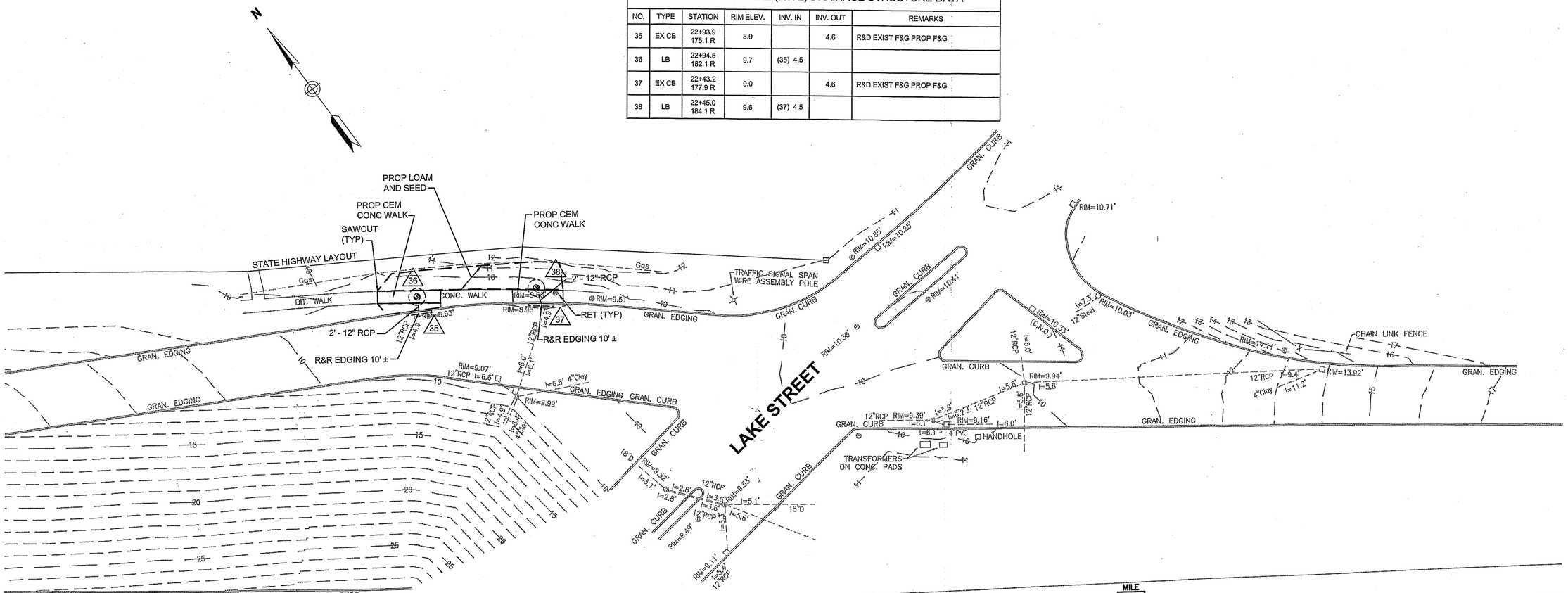
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-002S(352)	08	14
PROJECT FILE NO.	606280		

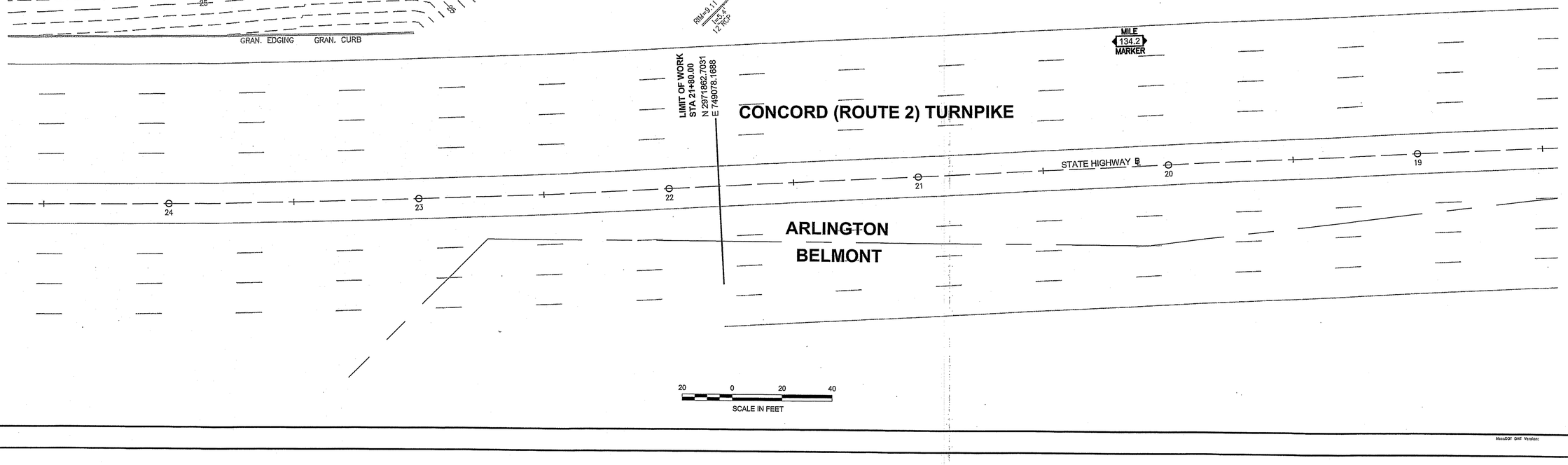
CONSTRUCTION PLANS

11945.05[75%]HD - GEN.DWG 18-Sep-2012

CONCORD TURNPIKE (RT. 2) DRAINAGE STRUCTURE DATA

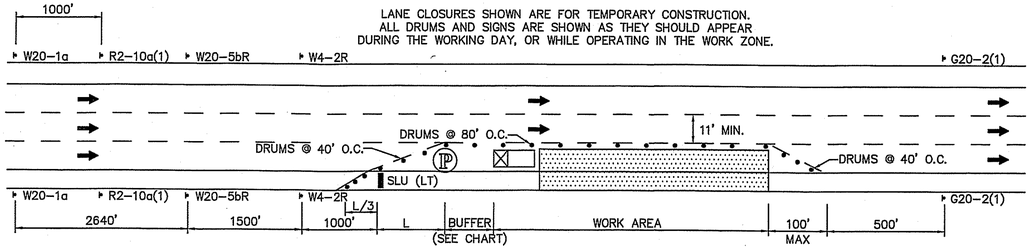
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
35	EX CB	22+93.9 176.1 R	8.9		4.6	R&D EXIST F&G PROP F&G
36	LB	22+94.5 182.1 R	9.7	(35) 4.5		
37	EX CB	22+43.2 177.9 R	9.0		4.6	R&D EXIST F&G PROP F&G
38	LB	22+45.0 184.1 R	9.6	(37) 4.5		





MassDOT GWT Version

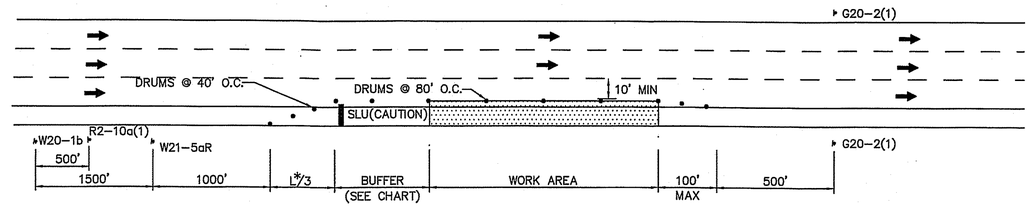
OPERATIONAL SIGNING



NOTE: THIS DETAIL SHOWS A RIGHT LANE CLOSURE DETAIL. THIS DETAIL CAN ALSO BE USED FOR LEFT LANE CLOSURES, WITH THE SIGN AND TRAFFIC CONTROL DEVICE PLACEMENT ADJUSTED TO THE LEFT SIDE OF THE ROADWAY AND REPLACING SIGNS W20-5aR AND W4-2R WITH W20-5bL AND W4-2L RESPECTIVELY.

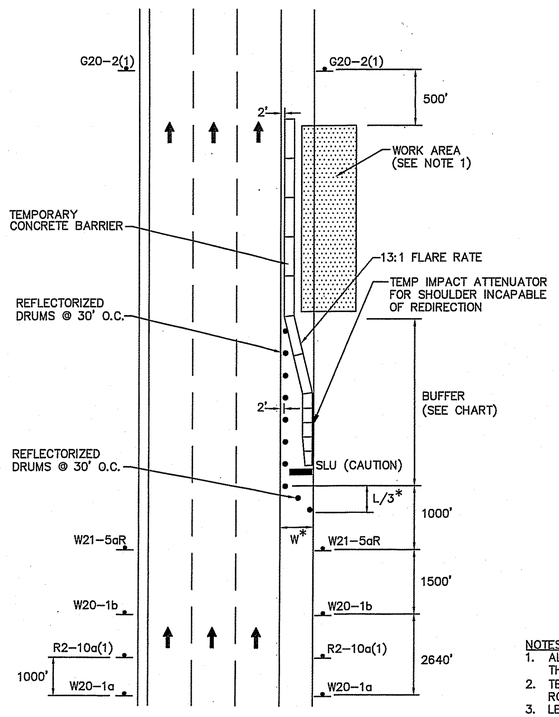
ONE LANE CLOSURE - RIGHT

NOT TO SCALE



RIGHT SHOULDER CLOSURE WTH MINOR ENCROACHMENT

NOT TO SCALE



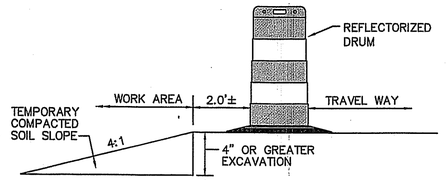
RIGHT SHOULDER CLOSED WITH BARRIER

NOT TO SCALE

NOTES:
1. ALL BLUNT ENDS OF BARRIER SHALL BE PROTECTED AT ALL TIMES IN ACCORDANCE WITH THE LATEST EDITION OF THE AASHTO ROADSIDE DESIGN GUIDE.
2. TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED FOR TEST LEVEL 3 (TL-3) ON ROADWAYS HAVING A POSTED SPEED IN EXCESS OF 45 MPH.
3. LEVEL ASPHALT CLEAR SLIDE SPACE FOR BARRIER SHALL BE FREE FROM OBSTRUCTIONS AT ALL TIMES. 3 FEET CLEAR SHALL BE PROVIDED FOR SPEEDS LESS THAN OR EQUAL TO 45 MPH. 5 FEET CLEAR SHALL BE PROVIDED FOR SPEEDS IN EXCESS OF 45 MPH.
4. IF MINIMUM CLEAR SLIDE SPACE CANNOT BE PROVIDED TEMP CONC BARRIER SHALL BE ANCHORED OR RESTRAINED BY A MASSDOT AND FHWA APPROVED METHOD.
5. TEMP IMPACT ATTENUATOR SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

LEGEND

●	DRUM	▨	WORK AREA PUBLIC ACCESS RESTRICTED
▲	TRAFFIC CONE	⟵	PROPOSED TRAFFIC FLOW
(P)	POLICE OFFICER	▮	SPECIAL LIGHTING UNIT (SLU)
(F)	FLAGGER	NTS	NOT TO SCALE
●	CONSTRUCTION SIGN	▮	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
⊠	MOVABLE IMPACT ATTENUATOR	⇦	DETOUR ROUTE
▬	TYPE III BARRICADES		



ROADWAY SLOPE PROTECTION

NOT TO SCALE

FOR POSTED SPEEDS GREATER THAN 40 MPH

* $L = W \times S$ L=TAPER LENGTH W=WIDTH OF ROADWAY TO BE SHIFTED OR REDIRECTED S=POSTED SPEED LIMIT

FOR POSTED SPEEDS OF 40 MPH OR LESS

* $L = \frac{WS^2}{60}$ L=TAPER LENGTH W=WIDTH OF ROADWAY TO BE SHIFTED OR REDIRECTED S=POSTED SPEED LIMIT

BUFFER SPACING

SPEED (MPH)	DISTANCE (FEET)
15	80
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

ARLINGTON - BELMONT (SPY POND)
DRAINAGE REPAIRS AND IMPROVEMENTS

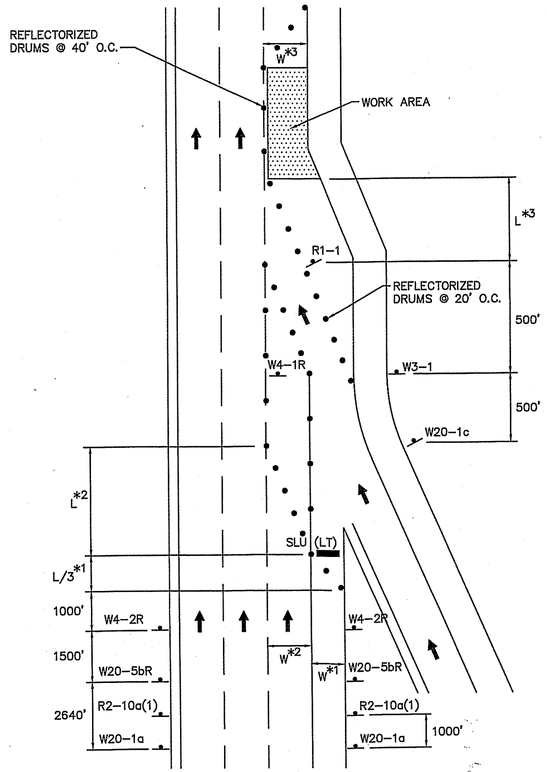
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-0025(352)	09	14
PROJECT FILE NO.	606280		

TEMPORARY TRAFFIC CONTROL PLANS

GENERAL NOTES

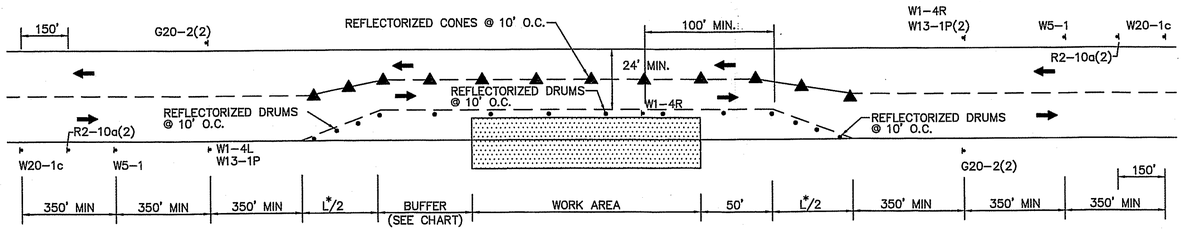
1. ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE LATEST VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED, THE LATEST REVISIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, (AASHTO) ROADSIDE DESIGN GUIDE, AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, AND NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWIRE (MASH).
2. WORK HOURS SHALL BE 9:00AM TO 3:00PM MONDAY THRU FRIDAY UNLESS OTHERWISE APPROVED BY THE ENGINEER. WORK SHALL NOT AFFECT TRAFFIC PATTERNS DURING PEAK TRAFFIC PERIODS. PEAK TRAFFIC PERIODS ARE DEFINED AS MONDAY THRU FRIDAY 7:00AM-9:00AM AND 3:00PM-6:00PM.
3. ALL DRUMS SHALL BE SET AT 40' ON CENTER MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
4. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.
5. GRADE SEPARATIONS IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF DRUMS.
6. EXCAVATION EDGES IN EXCESS OF 4 INCHES DEEP SHALL BE PROTECTED DURING NON-WORKING HOURS BY BACKFILLING WITH A WEDGE OF COMPACTED GRAVEL BORROW AT A 4:1 SLOPE PER THE DETAIL SHOWN. EXCAVATIONS IN EXCESS OF 2 FEET SHOULD BE PROTECTED BY A MASSDOT APPROVED TEMPORARY CONCRETE BARRIER WITH A MINIMUM LEVEL LATERAL OFFSET OF 3 FEET FROM THE EDGE OF EXCAVATION. BARRIER PLACED WITH LESS THAN THE RECOMMENDED LATERAL OFFSET TO THE EDGE OF EXCAVATION SHALL BE ANCHORED/RESTRAINED BY A MASSDOT AND FHWA APPROVED METHOD TO PREVENT LATERAL MOVEMENT WHEN STRUCK BY ERRANT VEHICLES TRAVELING AT THE POSTED SPEED.
7. THE CONTRACTOR SHALL PROVIDE TEMPORARY IMPACT ATTENUATORS TO PROTECT ALL BLUNT-ENDS OF TEMPORARY CONCRETE BARRIER, OR AS REQUIRED ON THE TRAFFIC MANAGEMENT PLANS. TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF WORK. ALL TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED FOR TEST LEVEL 2 (TL-2) ON ALL ROADWAYS HAVING A POSTED SPEED LESS THAN 45MPH AND TEST LEVEL 3 (TL-3) ON ROADWAYS HAVING A POSTED SPEED IN EXCESS OF 45MPH.
8. CONTRACTOR SHALL HAVE MOVEABLE IMPACT ATTENUATORS (1 PER CLOSED LANE) WITHIN AND IN ADVANCE OF THE WORK AREA FOR ALL TEMPORARY WORK ZONES ON RTE 2, OR AS DIRECTED BY THE ENGINEER.
9. 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED UNLESS OTHERWISE NOTED ON PLANS OR ADJUSTED BY THE ENGINEER.
10. TRAFFIC CONTROL DEVICES AND SIGNS SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS WHEN NOT IN USE.
11. ADVISORY SPEED PLATES (W13-1P) SHALL BE USED IF APPROPRIATE AND AS REQUESTED BY THE ENGINEER. ADVISORY SPEED SHALL BE AS ESTABLISHED BY THE MASSDOT DISTRICT 4 OFFICE.
12. SIGNS INSTALLED ON PORTABLE STANDS REQUIRE 12 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
13. SIGNS INSTALLED ON PORTABLE STANDS PLACED AMONG CHANNELIZATION DEVICES REQUIRE A 36 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
14. SIGNS MOUNTED ON POSTS REQUIRE A MINIMUM 84 INCH MOUNTING HEIGHT FROM THE ROADWAY OR SIDEWALK SURFACE TO THE BOTTOM OF THE SIGN.
15. W20-8 SIGNS SHALL BE REPLACED BY W20-7a SIGNS WHEN FLAGGERS ARE USED IN LIEU OF POLICE OFFICER DETAILS.
16. IMPACT ATTENUATORS ON RTE 2 SHALL BE DESIGNED TO MEET THE CRITERIA FOR TEST LEVEL 3 OF NCHRP 350 OR MASH.
17. TEMPORARY TRAFFIC CONTROL DEVICES ON TAPERS AND AT ROADWAY/RAMP CLOSURE LOCATIONS SHALL BE REFLECTORIZED DRUMS.
18. REFLECTORIZED CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.
19. CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPER AREAS.
20. PROVIDE CLEAR ZONES AROUND MOVEABLE IMPACT ATTENUATOR DEVICES AS REQUIRED BY THE THE MANUFACTURER.
21. POLICE DETAILS ARE REQUIRED IN EACH CLOSED LANE OF RTE 2 IN ACCORDANCE WITH MASSDOT STANDARDS.
22. CONTRACTOR MAY CLOSE ONE (1) LANE ON RTE 2 BETWEEN THE HOURS OF 9 AM TO 3 PM MONDAY THROUGH FRIDAY, UNLESS OTHERWISE APPROVED BY DISTRICT 4 PERMIT ENGINEER.
23. AT NO TIME SHALL ANY HAZARD PROTECTED BY GUARDRAIL OR BARRIER BE EXPOSED TO TRAFFIC. ANY GUARDRAIL OR BARRIER REMOVED TO COMPLETE THE WORK SHALL BE RESTORED AT THE END OF THE WORKING DAY OR PROTECTED BY BARRIER (SEE DETAIL) PRIOR TO EXPOSING THE HAZARD AREA TO TRAFFIC.
24. A PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE USED IF APPROPRIATE AND AS DIRECTED BY THE ENGINEER.
25. SLU FLASHING CAUTION SHALL FLASH IN FOUR-POINT CAUTION MODE ONLY.
26. CONTRACTOR SHALL SECURE WORK ZONE TO PREVENT UNAUTHORIZED ACCESS AT ALL TIMES.

11945.05(75%)HD - TMP.DWG 18-Sep-2012



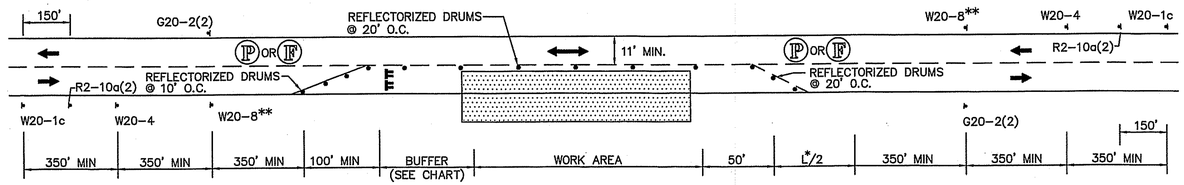
WORK BEYOND ENTRANCE RAMP

NOT TO SCALE



TYPICAL TWO WAY STREET LANE SHIFT

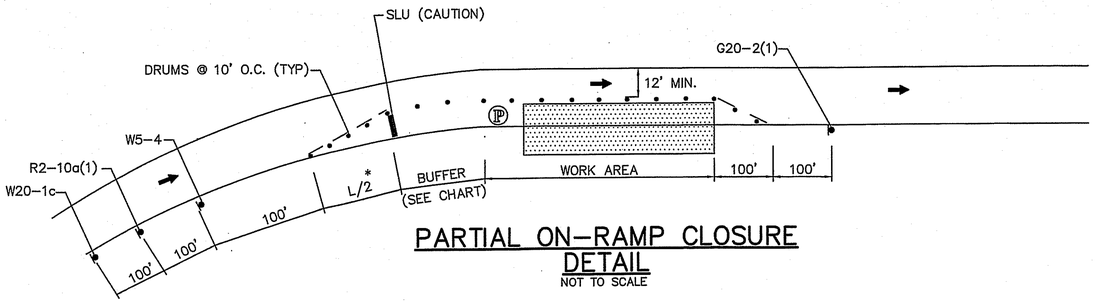
NOT TO SCALE



** SEE NOTE 15

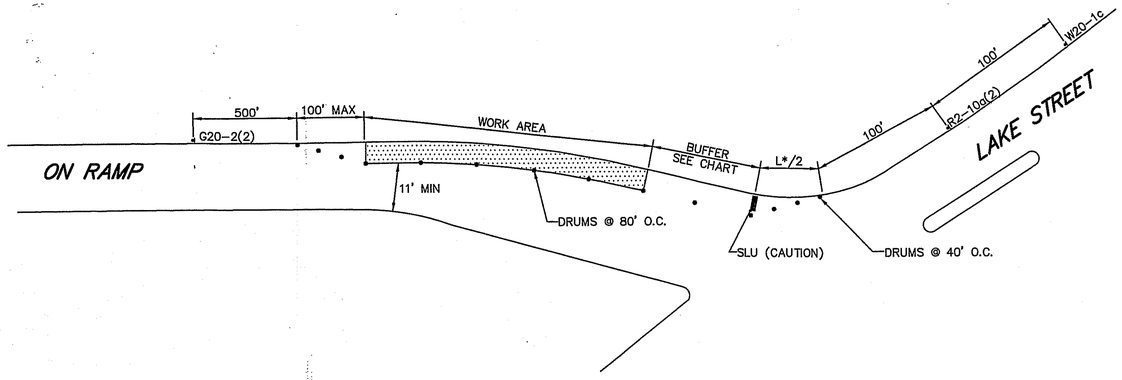
TYPICAL TWO WAY STREET LANE CLOSURE

NOT TO SCALE



PARTIAL ON-RAMP CLOSURE DETAIL

NOT TO SCALE



RIGHT SHOULDER CLOSURE AT LAKE STREET AND ROUTE 2 ON RAMP

SCALE: NOT TO SCALE

ARLINGTON - BELMONT (SPY POND)
DRAINAGE REPAIRS AND IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-002S(352)	10	14
PROJECT FILE NO.	606280		

TEMPORARY TRAFFIC CONTROL PLANS

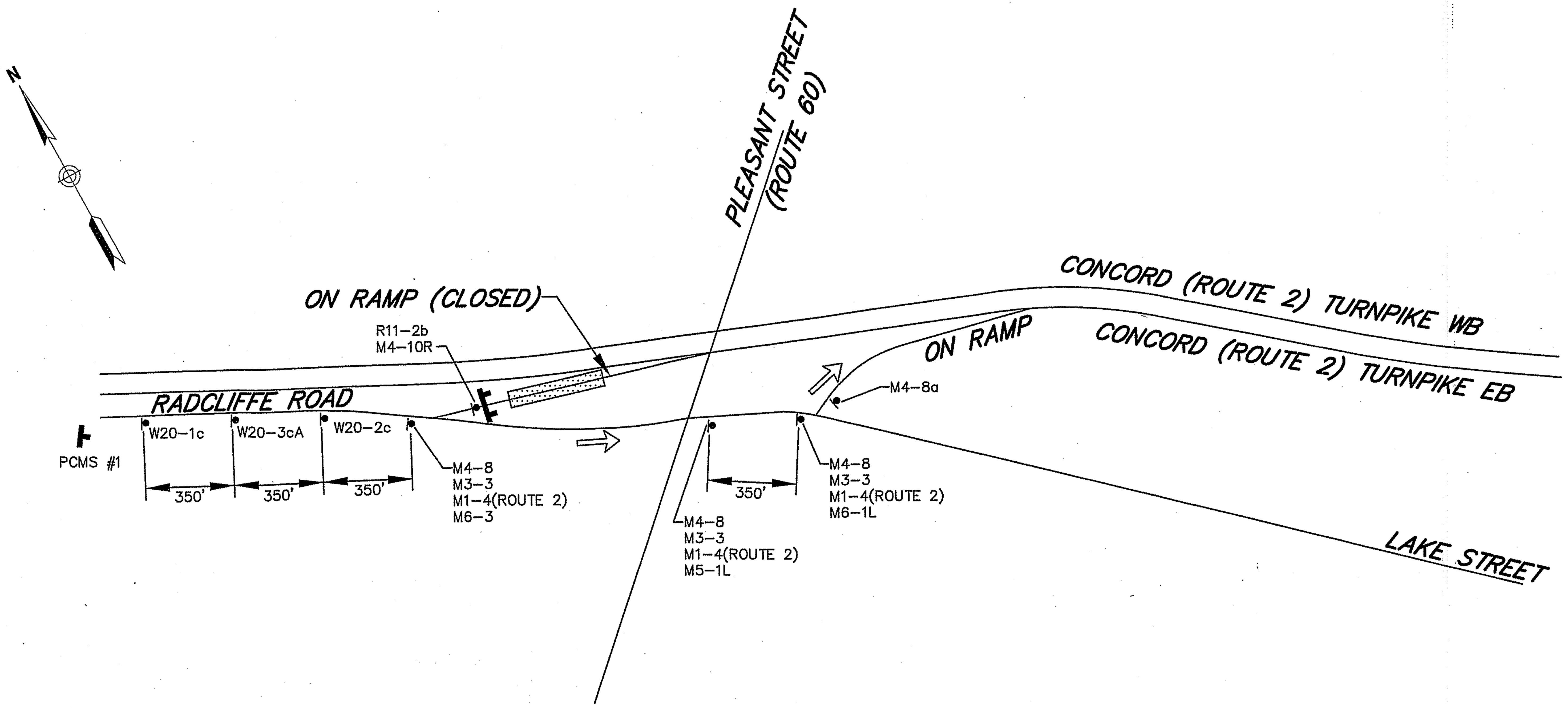
11945.05(75%)HD - TMP.DWG 18-Sep-2012

ARLINGTON - BELMONT (SPY POND)
DRAINAGE REPAIRS AND IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-002S(352)	11	14
PROJECT FILE NO.	606280		

TEMPORARY TRAFFIC CONTROL PLANS

11945.05[75%]HD - TMP.DWG 18-Sep-2012

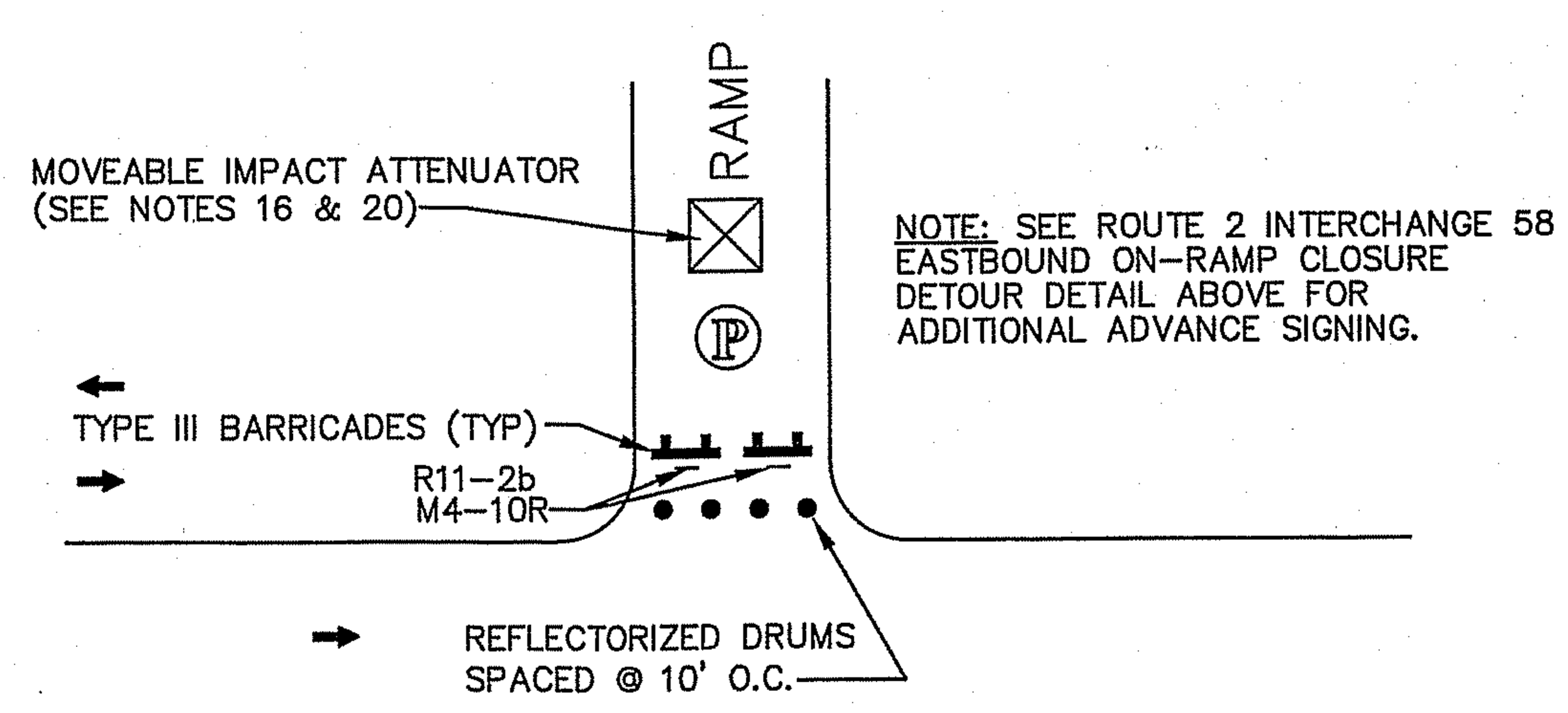


CONCORD (ROUTE 2) TURNPIKE INTERCHANGE
58 EASTBOUND ON-RAMP CLOSURE DETOUR

SCALE: NOT TO SCALE

PCMS #1 TEXT

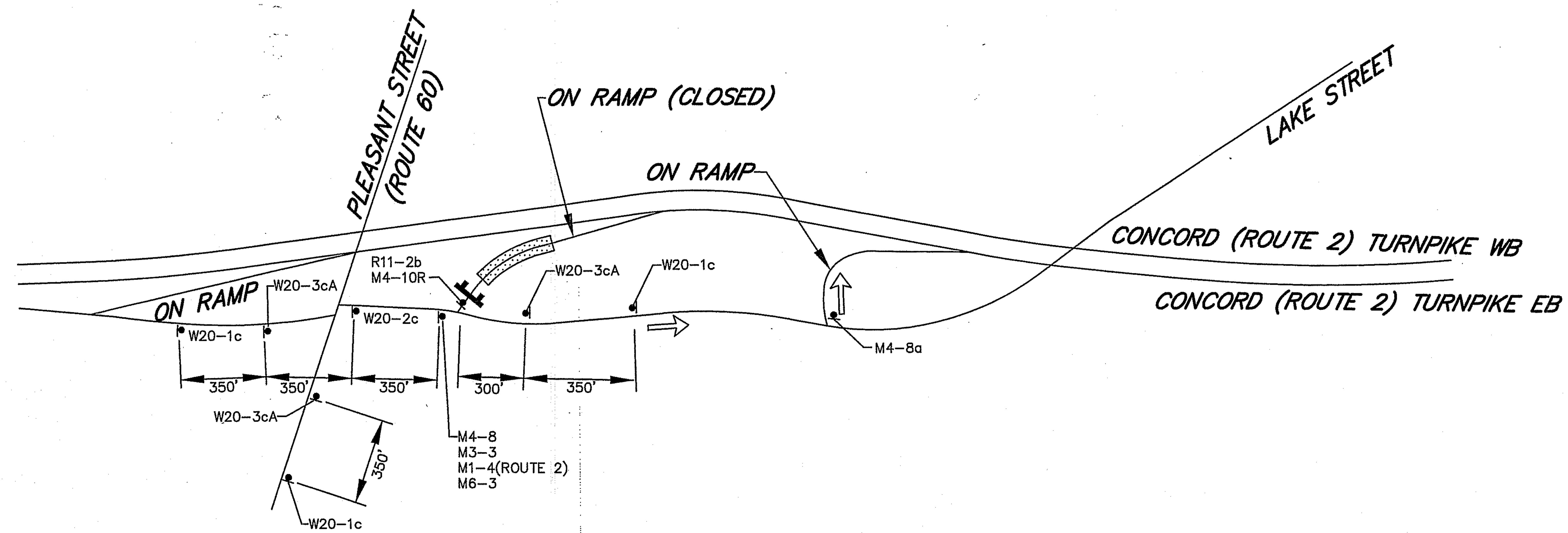
RTE 2 ON-RAMP CLOSED	DETOUR AHEAD



NOTE: SEE ROUTE 2 INTERCHANGE 58 EASTBOUND ON-RAMP CLOSURE DETOUR DETAIL ABOVE FOR ADDITIONAL ADVANCE SIGNING.

ROUTE 2 ON-RAMP CLOSURE

NOT TO SCALE



CONCORD (ROUTE 2) TURNPIKE INTERCHANGE
59 EASTBOUND ON-RAMP CLOSURE DETOUR

SCALE: NOT TO SCALE

ARLINGTON - BELMONT (SPY POND)
DRAINAGE REPAIRS AND IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-0025(352)	12	14
PROJECT FILE NO.	606280		

TEMPORARY TRAFFIC CONTROL PLANS

11945.05[75%]HD - TMP.DWG 18-Sep-2012

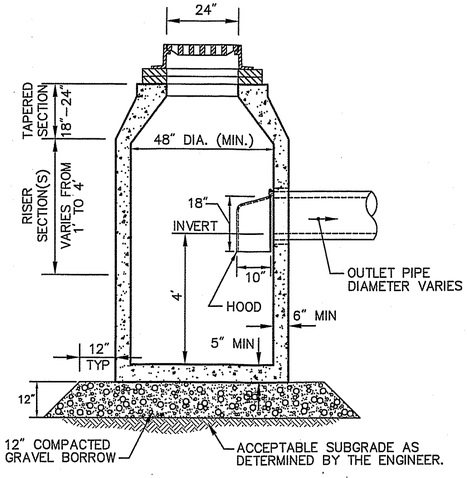
TEMPORARY TRAFFIC CONTROL SIGNS

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.
G20-2(1) G20-2(2)	48″ 36″	24″ 18″	END ROAD WORK	ORANGE	BLACK	BLACK	SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS		
R1-1	36″	36″	STOP	RED	RED/ WHITE	WHITE			
R2-10a(1) R2-10a(2)	60″ 48″	48″ 36″	WORK ZONE SPEEDING FINES DOUBLED	ORANGE WHITE	BLACK	BLACK			
R11-2b	48″	30″	RAMP CLOSED	WHITE	BLACK	BLACK			
W1-4L	30″	30″		ORANGE	BLACK	BLACK			
W1-4R	30″	30″		ORANGE	BLACK	BLACK			
W3-1	36″	36″		ORANGE RED	BLACK WHITE	BLACK			
W4-1R	48″	48″		ORANGE	BLACK	BLACK			
W4-2R	48″	48″		ORANGE	BLACK	BLACK			
W5-1	36″	36″	ROAD NARROWS	ORANGE	BLACK	BLACK			
W5-4	36″	36″	RAMP NARROWS	ORANGE	BLACK	BLACK			
W13-1P	36″	48″	XX MPH	ORANGE	BLACK	BLACK			
W20-1a	48″	48″	ROAD WORK 1 MILE	ORANGE	BLACK	BLACK			
W20-1b	48″	48″	ROAD WORK 1/2 MILE	ORANGE	BLACK	BLACK			
W20-1c	36″	36″	ROAD WORK AHEAD	ORANGE	BLACK	BLACK			
W20-2c	36″	36″	DETOUR AHEAD	ORANGE	BLACK	BLACK			
W20-3cA	36″	36″	RAMP CLOSED AHEAD	ORANGE	BLACK	BLACK			
W20-4	36″	36″	ONE LANE ROAD	ORANGE	BLACK	BLACK	SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS		
W20-5b(R)	48″	48″	RIGHT LANE CLOSED 1/2 MILE	ORANGE	BLACK	BLACK			
W20-7a	36″	36″		ORANGE	BLACK	BLACK			
W20-8	36″	36″	POLICE OFFICER AHEAD	ORANGE	BLACK	BLACK			
W21-5aR	36″	36″	RIGHT SHOULDER CLOSED	ORANGE	BLACK	BLACK			
M1-4(2)	36″	36″	2	WHITE	BLACK	BLACK			
M3-3	24″	12″	EAST	WHITE	BLACK	BLACK			
M4-8a	24″	18″	END DETOUR	ORANGE	BLACK	BLACK			
M4-8	24″	12″	DETOUR	ORANGE	BLACK	BLACK			
M4-10R	48″	12″	DETOUR	ORANGE	BLACK	–			
M5-1L	30″	21″		ORANGE	BLACK	BLACK			
M6-1L	30″	21″		ORANGE	BLACK	BLACK			
M6-3	30″	21″		ORANGE	BLACK	BLACK			

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-002S(352)	13	14
PROJECT FILE NO.	606280		

CONSTRUCTION DETAILS

11945.06(75%)HD - DET.DWG 18-Sep-2012

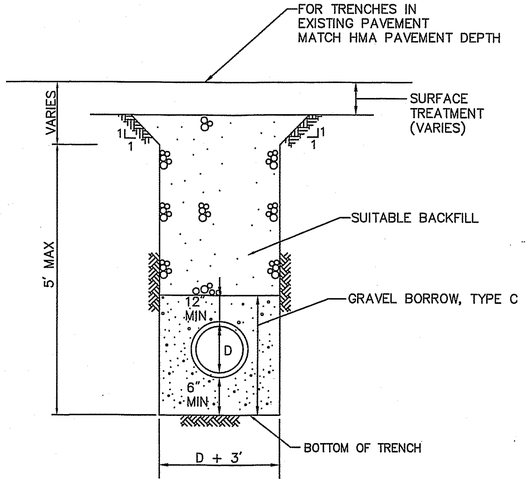


NOTES:

1. TOP SLAB OPENINGS FOR CBCI SHALL BE 24"x 27".
2. 6" MINIMUM SPACE FROM TOP OF KNOCKOUT TO BOTTOM OF ROOF SLAB JOINT REQUIRED WHEN USING HOODS.

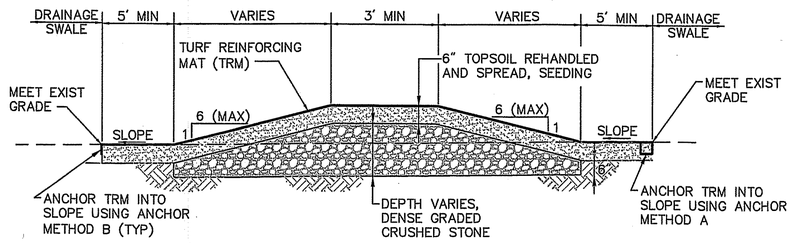
DEEP SUMP CATCH BASIN WITH HOOD

SCALE: NOT TO SCALE
DATE: DEC 2011
DWG: LD–105



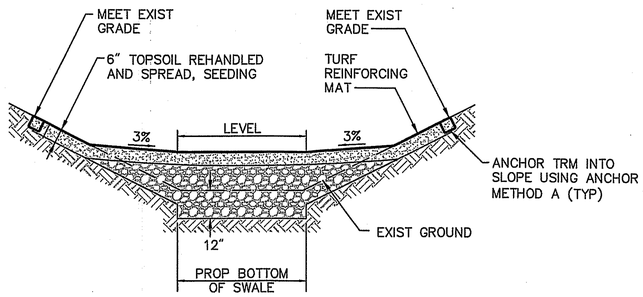
TRENCH DETAIL

SCALE: NOT TO SCALE
DATE: –
DWG: TRENCH–05



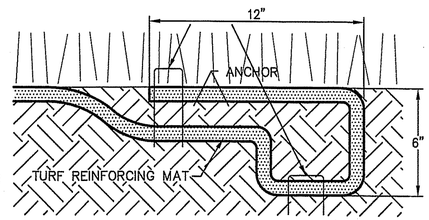
SECTION A-A

N.T.S.



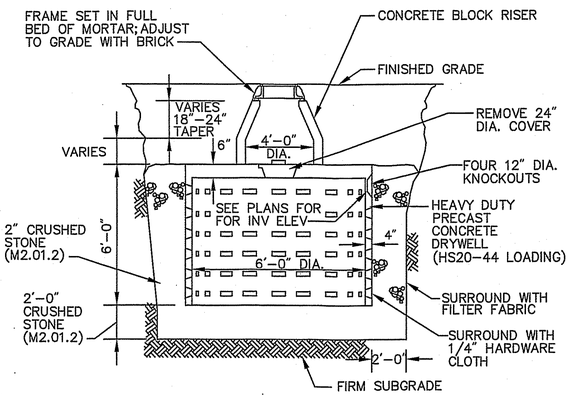
SECTION B-B

N.T.S.



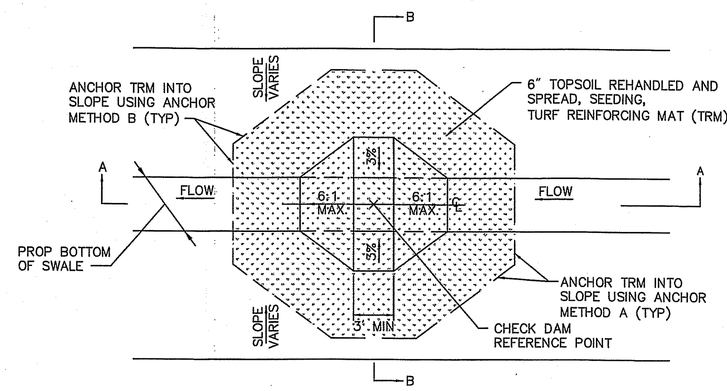
ANCHOR METHOD A

N.T.S.



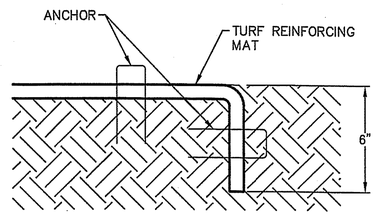
6' LEACHING BASIN

SCALE: NOT TO SCALE
DATE: 10–28–2008
DWG: H–STD, H92



PLAN VIEW

N.T.S.



ANCHOR METHOD B

N.T.S.

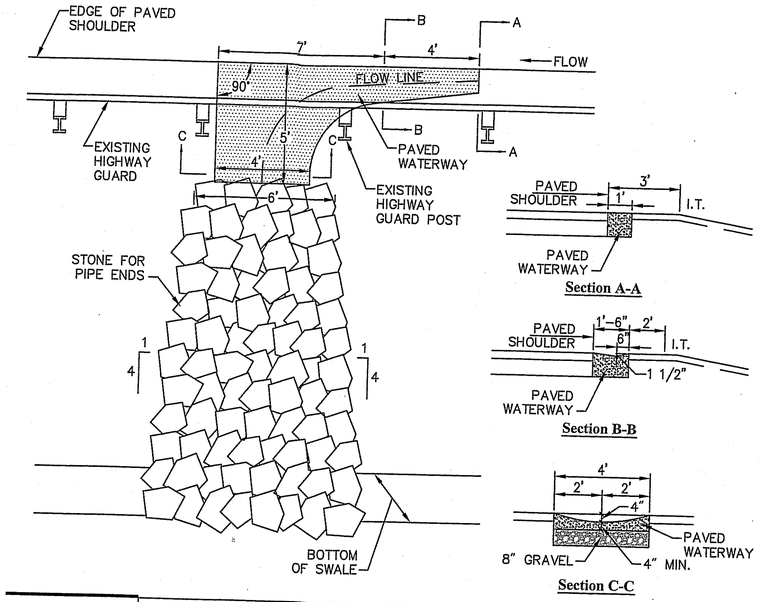
CHECK DAM

SCALE: NOT TO SCALE
DATE: DEC 2011
DWG: N/A

ARLINGTON - BELMONT (SPY POND)
DRAINAGE REPAIRS AND IMPROVEMENTS

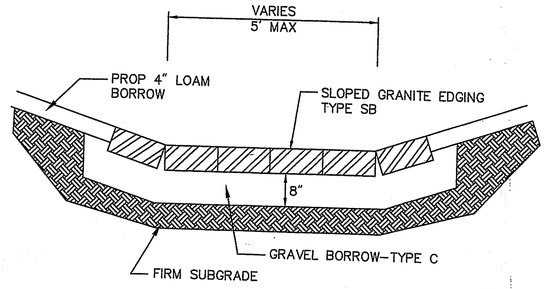
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	(STP)-002S(352)	14	14
PROJECT FILE NO.	606280		

CONSTRUCTION DETAILS



HOT MIX ASPHALT WATERWAY

SCALE: NOT TO SCALE
DATE: 12-23-2011
DWG: LD-105

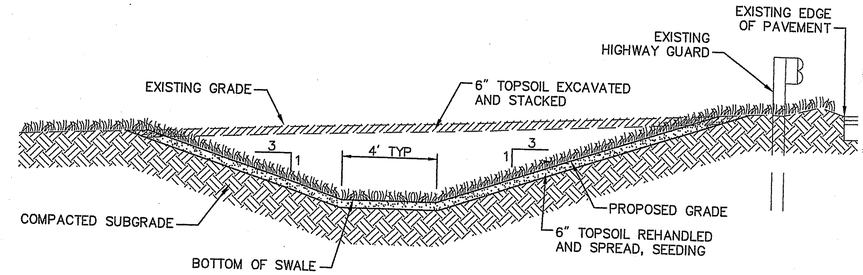


NOTES:

1. GRANITE EDGING WILL BE SUPPLIED BY MASSDOT DISTRICT 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRANSPORTING AND INSTALLATION. THE CONTRACTOR SHALL COORDINATE PICK UP TIME AND LOCATION WITH MASSDOT.

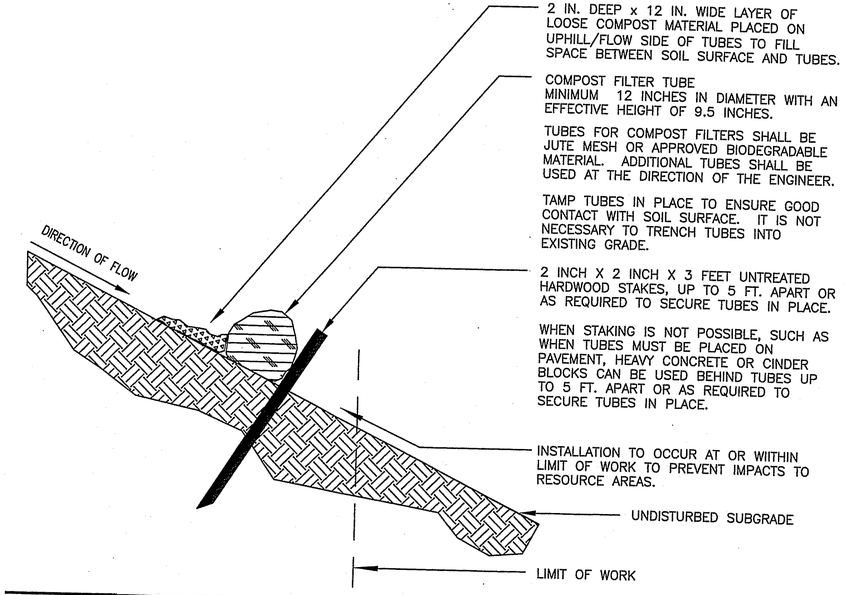
GRANITE EDGING FOREBAY BASE

SCALE: NOT TO SCALE
12/11



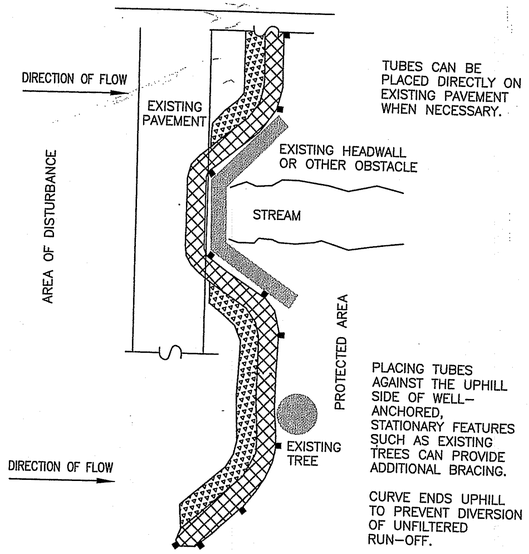
TYPICAL SWALE SECTION

SCALE: NOT TO SCALE
DATE: 6-22-2012
DWG: N/A

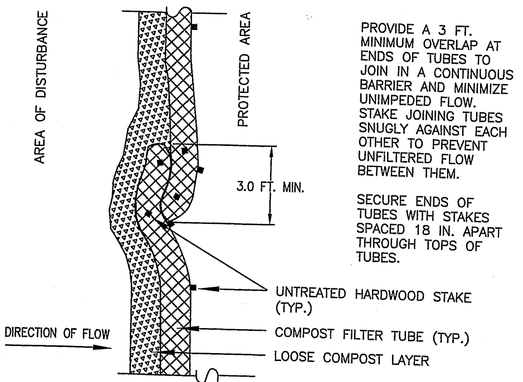


LINEAR SEDIMENTATION AND EROSION CONTROL

SCALE: NOT TO SCALE
DATE: SEPT 2011
DWG: N/A



PLAN VIEW
N.T.S.



PLAN VIEW - JOIN DETAIL
N.T.S.

NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.